

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE INSTALLATION OF COUNTDOWN PEDESTRIAN SIGNAL HEADS, APS PUSHBUTTONS AND SIGNS AT THE INTERSECTION OF MD 140 (MAIN STREET) AT COCKEYS MILL ROAD.

INTERSECTION OPERATION

THE INTERSECTION WILL CONTINUE TO OPERATE IN A NEMA FOUR-PHASE FULL-TRAFFIC-ACTUATED MODE WITH ALTERNATE PEDESTRIAN PHASES FOR THE NORTH AND SOUTH LEGS AND A CONCURRENT PEDESTRIAN PHASE FOR THE WEST LEG OF THE INTERSECTION. THE MD 140 NORTHBOUND LEFT TURNS OPERATE IN EXCLUSIVE-PERMISSIVE PHASING. SPECIAL OPERATIONS CAN BE ACTIVATED BY A POINT CONTROL PERSON, WHICH OPERATES AS A PEDESTRIAN SCRAMBLE PHASE.

CONTROLLER REQUIREMENTS

THE EXISTING FULL-TRAFFIC-ACTUATED EIGHT-PHASE TRAFFIC SIGNAL CONTROLLER HOUSED IN A BASE MOUNTED CABINET SHALL REMAIN. A 2-WIRE APS CENTRAL CONTROL UNIT SHALL BE FURNISHED BY THE CONTRACTOR AND INSTALLED BY SHA. IP-BASED VIDEO DETECTION INTERFACE EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY SHA.

SPECIAL NOTES

APS WILL FUNCTION AS FOLLOWS:

TO CROSS MD 140 (MAIN STREET):

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS MAIN AT COCKEYS MILL. WAIT."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

TO CROSS COCKEYS MILL ROAD:

- A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON UNIT MESSAGE WILL BE "WAIT TO CROSS COCKEYS MILL AT MAIN. WAIT."
- B. WHEN WALK PHASE BEGINS, THE MESSAGE WILL BE A RAPID TICK WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

EQUIPMENT LIST "A, B & C"

A. EQUIPMENT TO BE SUPPLIED BY SHA.

ITEM NO.	DESCRIPTION
900000	SHEET ALUMINUM GROUND MOUNTED SIGN 10 - S1-1 FYG 36"X36" 10 - M6-2 FYG 30"X24"
900000	SHEET ALUMINUM MAST ARM / POLE MOUNTED SIGN 2 - S1-1 FYG 36"X36" 2 - M6-2 FYG 30"X24"
900000	VIDEO DETECTION INTERFACE EQUIPMENT: 1-8 CAMERAS 6 - R10-3(1) 9"X15"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

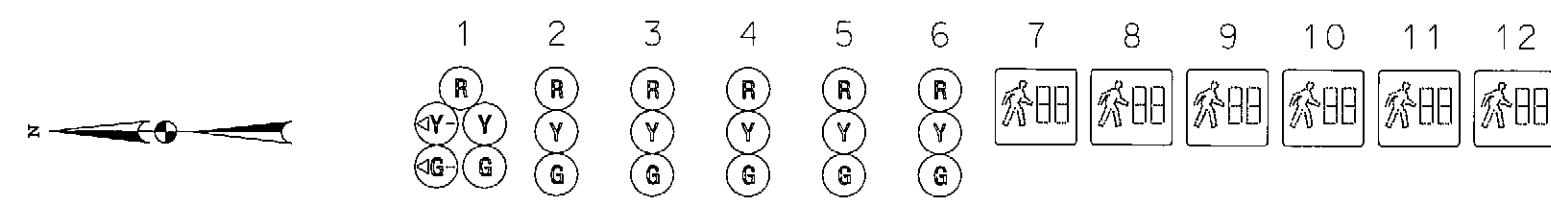
ITEM NO.	DESCRIPTION
100000	MAINTENANCE OF TRAFFIC (PER INTERSECTION)
500000	8 INCH PORTLAND CEMENT CONCRETE FOR DRIVEWAY MIX 9
585621	12 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585625	24 INCH WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES
585700	REMOVAL OF EXISTING PAVEMENT MARKING LINES, ANY WIDTH
600000	TYPE A COMBINATION CURB AND GUTTER ANY HEIGHT OR DEPTH
600000	TYPE A CURB ANY HEIGHT OR DEPTH
600000	DETECTABLE WARNING SURFACE FOR CURB RAMPS (TYPE 3 BRICK PAVERS)
655105	5 INCH CONCRETE SIDEWALK
800000	2-WIRE APS CENTRAL CONTROL UNIT
800000	ADJUST HANDHOLE TO GRADE AND REPLACE FRAME AND COVER
800000	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION AND SIGNS
800000	16 INCH LED COUNTDOWN PEDESTRIAN SIGNAL HEAD
800000	IP-BASED VIDEO DETECTION CAMERA & ANY LENGTH LEAD-IN CABLE
800000	5 FOOT OR 10 FOOT PEDESTAL POLE WITH BREAKAWAY COUPLINGS, FOUNDATION & GROUND ROD
800000	REMOVE & DISPOSE OF EXISTING SIGNAL EQUIPMENT (PER SIGNALIZED INTERSECTION LOCATION)
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED OR SLOTTED
800000	UP TO 4 INCH SCHEDULE 80 RIGID PVC CONDUIT-TRENCHED
800000	WOOD SIGN SUPPORTS UP TO 4 INCH X 6 INCH
800000	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 AWG)
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 AWG)

C. ALL MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

UNIT	QUANTITY
SF	140
SF	34
EA	1

UNIT	QUANTITY
EA	1
SY	205
LF	725
LF	30
LF	615
LF	233
LF	92
SF	72
SF	855
EA	1
EA	2
EA	6
EA	3
EA	2
EA	4
EA	60
LF	125
LF	92
SF	174
LF	205
EA	2
LF	530
LF	400

PHASING CHART



PHASE 1 AND 6	G	G	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	DW
1 AND 6 CHANGE	G	G	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 2 AND 6	G	G	G	G	R	R	DW	DW	WK	WK	DW	DW	DW	DW	DW
PED CLEARANCE	G	G	G	G	R	R	DW	DW	FL/DW	FL/DW	DW	DW	DW	DW	DW
2 AND 6 CHANGE	Y	Y	Y	Y	R	R	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4	R	R	R	R	G	G	DW	DW	DW	DW	DW	DW	DW	DW	DW
4 CHANGE	R	R	R	R	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	R	R	R	R	G	G	WK	WK	DW	DW	WK	WK	DW	DW	DW
PED CLEARANCE	R	R	R	R	G	G	FL/DW	FL/DW	DW	DW	FL/DW	FL/DW	DW	DW	DW
4 ALT CHANGE	R	R	R	R	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW	DW
SPECIAL OPERATION	R	R	R	R	R	R	WK	WK	WK	WK	WK	WK	WK	WK	WK
PED CLEARANCE	R	R	R	R	R	R	FL/DW	FL/DW	FL/DW	FL/DW	FL/DW	FL/DW	FL/DW	FL/DW	FL/DW
SPEC. OP. CHANGE	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

GENERAL NOTES

- THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE LOCATIONS PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABELING EACH CABLE.
- ALL UNUSED CABLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
- UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "MISS UTILITY" PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
- ALL PEDESTAL FOUNDATION TOPS SHALL BE INSTALLED FLUSH WITH SIDEWALK GRADE.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SECTION 4E.10, MUTCD FIGURES 4E-3 AND 4E-4, AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE." IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON. NOT CENTER OF POLE.
- PUSHBUTTON ARROWS AND SIGNS ARE TO BE ORIENTED PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- VIDEO DETECTION CAMERA ALIGNMENT SHALL BE COORDINATED WITH THE ENGINEER.
- DURING CONSTRUCTION, PROPOSED SIGNAL EQUIPMENT SHALL NOT BLOCK EXISTING SIGNAL EQUIPMENT.
- THE CONTRACTOR SHALL CAP AND ABANDON CONDUITS FEEDING EXISTING SIGNAL EQUIPMENT THAT IS REMOVED.
- THE CONTRACTOR SHALL CONTACT ED RODENHIZER AT THE SIGNAL SHOP (410-787-7652) TO DELIVER APS EQUIPMENT FOR TESTING.

CONTACT PERSONS FOR DISTRICT #4 ARE AS FOLLOWS:

MS. ERIN KUHN  
ASSISTANT DISTRICT ENGINEER - TRAFFIC  
PHONE: 410-229-2381

MR. ANDRE FUTRELL  
ASSISTANT DISTRICT ENGINEER - MAINTENANCE  
410-229-2361

MR. JESSE FREE  
ASSISTANT DISTRICT ENGINEER - CONSTRUCTION  
410-229-2421

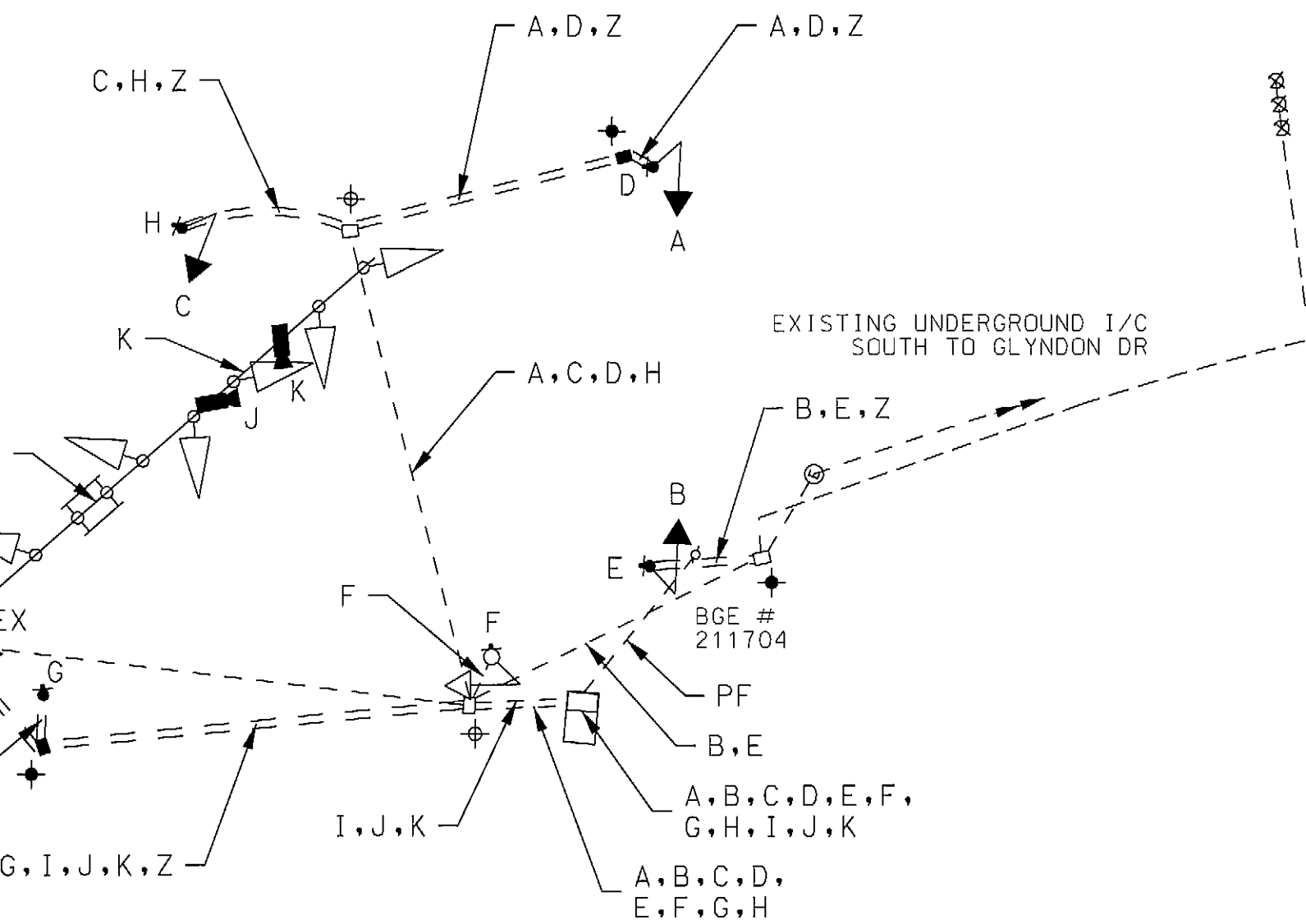
CONTACT PERSONS FOR OOTS ARE AS FOLLOWS:

MR. AVIJIT MAJI  
DIVISION CHIEF,  
TRAFFIC OPERATIONS  
PHONE: 410-787-7630

MR. ROBERT SNYDER  
ASSISTANT DIVISION CHIEF  
TRAFFIC OPERATIONS  
410-787-7631

MR. ED RODENHIZER  
CHIEF, SIGNAL OPERATIONS  
410-787-7650

MR. EUGENE BAILEY  
CHIEF, SIGN OPERATIONS  
410-787-7676



WIRING KEY

A,B,C	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
D,E,F,G,H	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
I	12-PAIR COMMUNICATION CABLE, JELLYFILLED (SEE INTERCONNECT PLAN)
J,K	IP-BASED VIDEO DETECTION CAMERA CABLE
Z	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
EX	USE EXISTING CABLE
PF	EXISTING POWER FEED
⊕	EXISTING GROUND ROD
⚡	PROPOSED GROUND ROD

RK&K

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Engineers Construction Managers Planners Scientists  
www.rkk.com

SHA

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY  
TRAFFIC ENGINEERING DESIGN DIVISION  
MD 140 (MAIN STREET) AT  
COCKEYS MILL ROAD  
REISTERSTOWN, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE FEBRUARY 2013 CONTRACT NO. XY1515185

DESIGNED BY WFW COUNTY BALTIMORE  
DRAWN BY WFW LOGMILE 03014009.56  
CHECKED BY BJG TMS NO. L825  
FAP NO. TOD NO.

TS NO. 3736B-G1 DRAWING SP-2 OF 4 SHEET NO. 5 OF 7